REMARKS

In accordance with the foregoing, the specification and claims 1 and 6 have been amended. Claims 2, 4, 7, and 9 has been cancelled. New claims 11 and 12 have been added. Support for the amendments to claim 1 and 6 may be found in claims 2, 4, 7, and 9 as filed originally, as well as in the specification at page 6, lines 1-6, page 13, lines 5-10, and page 16, lines 3-8. Support for new claims 11 and 12 may be found in claims 1 and 6 as filed originally. Claims 1, 3, 5, 6, 8, 10, 11, and 12 are pending and under consideration.

Objections to the Abstract of the Disclosure:

The Abstract of the Disclosure has been objected to for including the word "means." The Abstract has consequently been re-written without using the word "means." No new matter has been added. Withdrawal of the objections is earnestly solicited.

Objections to the Claims:

Claims 1 and 6 were objected to for various informalities. Claims 1 and 6 were amended in substantial accord with the Examiner's suggestions. The Examiner's suggestions are appreciated. Withdrawal of the objection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 103:

Claims 1, 3, 5, 6, 8, and 10 were rejected under 35 U.S.C. § 103 as being unpatentable over Pott, US 6,164,064 (hereinafter "Pott") in view of Hirota et al., US 6,233,925 (hereinafter "Hirota"). The rejection is traversed to the extent it might apply to the claims as amended. Reconsideration is earnestly solicited.

Claim 1 recites, in pertinent part:

"a NO_x occlusion reduction type catalyst having a catalyst metal and a NO_x occluding substance."

Pott fails to disclose that an NO_x occlusion reduction type catalyst has a catalyst metal and an NO_x occluding element, as acknowledged graciously in the Office Action at page 3. The Office Action proposes to compensate for this deficiency of Pott with respect to claim 1 by combining Pott with Hirota, saying at page 4,

> "It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the NO_x occlusion reduction type catalyst taught by Hirota et al. in the system and method of Pott, since the use thereof would have been routinely practiced by those with ordinary skill in the art."

Pott, however, actually fails to disclose any NO_x occlusion reduction type catalyst at all, let alone a catalyst metal and an NO_x occluding element for a NO_x occlusion reduction type catalyst. NO_x reservoir catalyst 3 of Pott, to which the Office Action refers as an NO_x occlusion reduction type catalyst, is actually a *reservoir* catalyst as described at column 2, lines 59, 60, and 67, not a NO_x occlusion reduction type catalyst.

Furthermore, the purpose of Pott is the desulfurization of NO_x reservoir catalyst 3, which is poisoned by sulfur. In particular, as described at column 1, lines 11-20:

> NO_x reservoir catalysts are poisoned during operation by sulfur contained in the fuel and incorporation of the sulfur as sulfate in the NO_x reservoir catalyst, so that the NO_x adsorption by the reservoir catalysts is impeded or prevented. Consequently a desulfurization of the NO_x reservoir catalyst must be carried out at periodic intervals. It is known that sulfur poisoning of the NO_x reservoir catalysts is largely or completely reversible, if the catalyst is subjected to a temperature above desulfurization temperature in a reducing environment. As used herein, the term "desulfurization" refers to the removal of sulfur in any form from a catalyst.

The NO_x occlusion reduction type catalyst of Hirota, on the other hand, purifies SO_x more excellently, as described in Hirota at column 1, lines 38 and 39. This is to be contrasted with NO_x reservoir catalyst 3 of Pott, in which NO_x adsorption is *impeded* or *prevented* by sulfur poisoning. Therefore, it is submitted that persons of ordinary skill in the art who read Pott and Hirota for all they contained at the time the invention was made would have been deterred from modifying Pott in the manner proposed in the Office Action, since there is no need to de-sulfurize the NO_x occlusion reduction type catalyst of Hirota in the manner of Pott, since it is not poisoned by sulfur in the first place.

Finally, the Office Action provides no motivation or suggestion to combine the teachings of Pott and Hirota, as required by 35 U.S.C. § 103(a) and the M.P.E.P. §706.02(j)(D), beyond the assertion that it would have been practiced routinely by those with ordinary skill in the art. A rejection under 35 U.S.C. § 103(a), as explained in the M.P.E.P. §706.02(j)(D), however, requires more than an assertion that it would have been practiced routinely by those with ordinary skill in the art. In particular,

> 35 U.S.C. 103 authorizes a rejection where, to meet the claim, it is necessary to modify a single reference or to combine it with one or more other references. After indicating that the rejection is under 35 U.S.C. 103, the examiner should set forth in the Office action: . . .
> (D) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification. M.P.E.P. § 706.02(j)(D).

> "It is insufficient that the prior art [discloses] the components . . . either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor." Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990), *cert. denied*, 498 U.S. 920 (1990).
>
> "When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references." In re Rouffet, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998); see also M.P.E.P. § 2143.01. Virtually all inventions are combinations of old elements. *See* In re Rouffet, 47 USPQ2d at 1457.

If identification of each claimed element in the prior art were sufficient to negate patentability, the Office action could use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. *See Id.* To prevent the use of hindsight based on the teachings of the patent application, the Office action must show a motivation to combine the references in the manner suggested. *See Id.* at 1457-1458.

Many things may have been practiced *individually* at the time of the invention. A rejection under 35 U.S.C. § 103(a) requires a showing that the *combination* of elements was obvious, i.e.. a showing that persons of ordinary skill in the art at the time the invention was made would have seen fit to practice the claimed *combination* routinely. Here, the Office Action has pointed to no teaching, either in the cited references or the general state of the art, as to why one of ordinary skill in the art at the time the invention was made would have been motivated to modify Pott to form the claimed combination, beyond asserting that it would have been practiced routinely by those with ordinary skill in the art. Therefore, it is submitted that there is no evidence to support the assertion in the Office Action that persons of ordinary skill in the art at the time the invention was made would have modified Pott in the manner proposed in the Office Action.

Furthermore, claim 1 recites,

"an intake control of the diesel engine for controlling the torque generation of the diesel engine."

Neither Pott nor Hirota teach, disclose, or suggest an intake control of a diesel engine for controlling the *torque* generation of the diesel engine, as recited in claim 1. Thus, even if Pott and Hirota were combined the claimed invention would not result.

No intake control is performed conventionally during lean burn operation of diesel

engines. Normal control is conventionally performed during EGR as well with throttle valve 23 wide open. Indeed, most diesel engines have no throttles at all. Output control, rather, is carried out by adjusting the rate or amount of fuel flow. Here, since torque generation during catalyst activation is adjusted through intake control, it is possible to suppress variations in torque generation during transition times between normal control and catalyst activation control.

Furthermore, it is also possible to suppress variation of torque generation during rich-burn operation with intake control as well, such as during transition times between rich-burn control and catalyst activation control, as well as between rich-burn control operation and normal control.

Finally, closing an EGR valve fully during catalyst activation control operations allows an exhaust valve temperature to be elevated to the maximum extent possible, while smokeless burning can be realized during rich-burn operation by performing EGR

Claim 1 is submitted to be allowable. Withdrawal of the rejection of claim 1 is earnestly solicited.

Claims 3 and 5 depend from claim 1 and add further distinguishing elements. Claims 3 and 5 are thus also submitted to be allowable. Withdrawal of the rejection of claims 3 and 5 is also earnestly solicited.

Rejection of claims 6, 8, and 10:

Claim 6 recites, in pertinent part:

"a NO_x occlusion reduction type catalyst having a catalyst metal and a NO_x occluding substance."

Pott discloses no NO_x occlusion reduction type catalyst, let alone a catalyst metal and an NO_x occluding element for one, as discussed above with respect to the rejection of claim 1. Furthermore, persons of ordinary skill in the art who read Pott and Hirota for all they contained at the time the invention was made would have been deterred from modifying Pott in the manner proposed in the Office Action, as also discussed above with respect to the rejection of claim 1.

Claim 6 recites further,

"an intake control of the diesel engine for controlling the torque generation of the diesel engine."

Neither Pott nor Hirota teach, disclose, or suggest an intake control of a diesel engine for controlling the torque generation of the diesel engine, as discussed above with respect to the

rejection of claim 1. Thus, even if Pott and Hirota were combined the claimed invention would not result. Claim 6 is submitted to be allowable for at least those reasons discussed above with respect to the rejection of claim 1. Withdrawal of the rejection of claim 6 is earnestly solicited.

Claims 8 and 10 depend from claim 6 and add further distinguishing elements. Claims 8 and 10 are thus also submitted to be allowable. Withdrawal of the rejection of claims 8 and 10 is also earnestly solicited.

New Claims 11 and 12:

New claims 11 and 12 recite, inter alia exhaust gas purification using a NO_x occlusion reduction type catalyst having a catalyst metal and a NO_x occluding substance in a fuel-rich environment. None of the cited references teach, disclose, or suggest exhaust gas purification using a NO_x occlusion reduction type catalyst having a catalyst metal and a NO_x occluding substance in a fuel-rich environment. Claims 11 and 12 are thus believed to be allowable as well.

Conclusion:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 10 AUG 05

By: _____

Thomas E. McKiernan
Registration No. 37,889

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501